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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 20040109

Application Number: 10/084,723  
Filing Date: February 25, 2002  
Appellant(s): YOUNG, NIGEL D.

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**GROUP 2800**

Robert M. McDermott, Esq. (41,508) (Corporate Patent Counsel U.S. Philips Corporation)  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 11/05/2003.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

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**(2) *Related Appeals and Interferences***

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

No amendment after final has been filed.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

The rejection of claims 1-15 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

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**(9) Prior Art of Record**

|         |                         |         |
|---------|-------------------------|---------|
| 6323832 | <i>Nishizawa et al.</i> | 11-2001 |
| 5821688 | <i>Shanks et al.</i>    | 10-1998 |

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6, 8-11, & 13 are rejected under 35 U.S.C. 102(e) as being anticipated by  
U.S. Patent No. 6,323,832 Nishizawa et al.

3. Referring to claim 1, a flexible matrix array device comprising: a thin film matrix circuit carried on the surface of a flexible substrate, (Figure 3b #3), which matrix circuit, (Figure 1), includes semiconductor devices, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32), arranged in a regular array and occupying respective first areas, (Figure 3b examiner's label #11), of the substrate, (Figure 3b #3), and pixel electrodes, (Figure 1 #2), correspondingly coupled to each of the semiconductor devices, (Figure 1 & 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32), and occupying respective second areas, (Figure 3b examiner's label #10), of the substrate, (Figure 3b #3);

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wherein the substrate, (Figure 3b #3), is configured such that flexing of the substrate, (Figure 3b #3), occurs more readily at the second areas, (Figure 3b examiner's label #10), than at the first areas, (Figure 3b examiner's label #11).

4. Referring to claim 2, A curved matrix array device comprising a thin film matrix circuit, carried on the surface of a substrate, (Figure 3b #3), which matrix circuit, (Figure 1), includes semiconductor devices, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32), arranged in a regular array and occupying respective first areas, (Figure 3b examiner's label #11), of the substrate, (Figure 3b #3), and pixel electrodes, (Figure 1 #2), correspondingly coupled to each of the semiconductor devices, (Figure 1 & 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32), and occupying respective second areas, (Figure 3b examiner's label #10), of the substrate, (Figure 3b #3); wherein the substrate, (Figure 3b #3), is configured such that curvature of the device is accommodated substantially by deformation at the substrate, (Figure 3b #3), at the second areas, (Figure 3b examiner's label #10).

5. Referring to claim 3, a flexible matrix array device, wherein the second areas, (Figure 3b Examiner's label #10), comprise locally thinner regions of the substrate, (Figure 3b #3).

6. Referring to claim 6, a flexible matrix array device, wherein the second areas, (Figure 3b Examiner's label #10), comprise areas of the substrate, (Figure 3b #3), at which the material of the substrate, (Figure 3b #3), is rendered less stiff compared with the first areas, (Figure 3b examiner's label #11), of the substrate, (Figure 3b #3).

7. Referring to claim 8, a flexible matrix array device, wherein the second areas, (Figure 3b examiner's label #10), include lines that facilitate flexing of the substrate, (Figure 3b #3), between the first areas, (Figure 3b examiner's label #11), of the substrate, (Figure 3b #3).

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8. Referring to claim 9, a flexible matrix array device, wherein the semiconductor devices, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32), are arranged in an array of rows and columns, (Figure 1), and wherein the second areas, (Figure 3b Examiner's label #10), comprise lines that facilitate flexing of the substrate, (Figure 3b #3), extended across the array, (Figure 1), between rows and/ or columns of semiconductor devices, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32).

9. Referring to claim 10, a flexible matrix array device, wherein the first areas, (Figure 3b examiner's label #11), are thicker than the second areas, (Figure 3b examiner's label #10), of substrate, (Figure 3b #3).

10. Referring to claim 11, a flexible matrix array device, wherein the semiconductor devices each comprise a semiconductor film formed into an island, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32).

11. Referring to claim 13, a flexible matrix array device, wherein the device comprises an active matrix display devices, (Figure 1), having an array of display pixels, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 & 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent

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12. Referring to claim 4, a flexible matrix array device, wherein the locally thinner regions are formed by selective etching of the substrate.

Initially, and with respect to claim 4, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

As to the grounds of rejection under section 103, see MPEP § 2113

13. Referring to claim 5, a flexible matrix array device, wherein the substrate comprises a laminated structure with at least two layers and in which one layer is patterned to form the locally thinner regions.

Initially, it is noted that the 35 U.S.C. § 103 rejection based on a substrate with one layer laminated to another layer that is patterned in which makes a substrate with thinner regions, which deals with an issue (i.e., the integration of multiple pieces into one piece or conversely, using multiple pieces in replacing a single piece) that has been previously decided by the courts.

In Howard v. Detroit Stove Works 150 U.S. 164 (1893), the Court held, "it involves no invention to cast in one piece an article which has formerly been cast in two pieces and put together...."

In In re Larson 144 USPQ 347 (CCPA 1965), the term "integral" did not define over a multi-piece structure secured as a single unit. More importantly, the court went further and stated, "we are inclined to agree with the solicitor that the use of a one-piece construction instead of the [multi-piece] structure disclosed in Tuttle et al. would be merely a matter of obvious engineering choice" (bracketed material added). The court cited In re Fridolph for support.

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In re Fridolph 135 USPQ 319 (CCPA 1962) deals with submitted affidavits relating to this issue. The underlying issue in In re Fridolph was related to the end result of making a multi-piece structure into a one-piece structure. Generally, favorable patentable weight was accorded if the one-piece structure yielded results not expected from the modification of the two-piece structure into a single piece structure.

Therefore, it would have been obvious to one of ordinary skill in the art to use a one piece substrate that has thinner regions as "merely a matter of obvious engineering choice" as set forth in the above case law.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 6,323,832 Nishizawa et al. in view of U.S. Patent No. 5,821,688 Shanks et al.

14. Referring to claim 7, a flexible matrix array device, wherein the substrate comprises polymer material, (Shanks et al. Col. 5 Lines 40-44).

Nishizawa et al. teaches all of the claimed material in claim 7, but does not teach the substrate #101 to be made out of a polymer material. Shanks et al. teaches a flexible TFT matrix array with a substrate being made out of a polymer material, (Col. 5 Lines 40-44). It would be obvious to one skilled in the art to combine the teachings of Nishizawa et al. with the teachings of Shanks et al. because a polymer substrate would further allow the LCD matrix array to be more flexible.



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15. Referring to claim 12, a flexible matrix array device, wherein the semiconductor devices comprises thin film transistors, (Shanks et al. Col. 5 Lines 15-16).

Nishizawa et al. teaches all of the claimed material in claim 12, but does not teach the transistors being made of thin film transistors. Shanks et al. teaches a flexible TFT matrix array, (Col. 5 Lines 15-16 & 40-44). It would be obvious to one skilled in the art to combine the teachings of Nishizawa et al. with the teachings of Shanks et al. because TFT matrix array would further allow the LCD matrix array to be more flexible.

**(11) Response to Argument**

After reviewing the disclosure in pages 3-5 of the Appeal Brief, Appellant states in a *first argument* on page 3 lines 1-31 and page 4 lines 1-13 of the Appeal Brief that the rejection under 35 U.S.C 102(e) as being anticipated by U.S. Patent No. 6,323,832 Nishizawa et al. does not teach the claimed matter in claims 1 and 2. The Appellant states the Nishizawa et al. does not distinguish between the semiconductor devices and the pixel electrodes. The Appellant states that Nishizawa et al. does not use the specific term pixel electrode and does not identify any of the luminous elements 1a, 2a, 3a, etc. that occupy distinguishable areas from the semiconductor devices within the luminous elements. The Appellant believes that Nishizawa et al. does not teach the semiconductor devices in the first areas and the pixel electrodes in the second areas where the second areas of the substrate are weaker than the first areas. The Appellant also believes that the cited pixel electrode, (Nishizawa et al. Figure 1 #2), in the final rejection filed on 6/04/2003 are wires and not pixel electrodes.

Since the independent claims do not specifically claim and refer to the Applicant's disclosed device, the examiner finds the arguments to be non-persuasive on this basis and the claims will be interpreted in the broadest view. Nishizawa et al. teaches a matrix array of leds, (semiconductor devices Nishizawa et al. Figure 1 #1a, 2a, 3a, etc. Col. 2 Lines 24-25); which each of the leds in the array are an individual pixel amongst the array as a whole, (Nishizawa et al. Col. 2 Lines 50-51), and are coupled together by wires, (pixel electrodes, wherein electrodes are used to electrically couple devices together). The Appellant's claim language does not teach the pixel electrode to be defined by the specific and narrowed art of TFTs and LCDs as being argued by the Applicant, but are claimed in a broader scope which would allow one having skill in the art to interpret the term pixel electrode as follows. The Appellant is arguing that Nishizawa et al.'s wires Figure 1 #2 are not pixel electrodes, but the Merriam Webster's Collegiate Dictionary 10<sup>th</sup> edition on page 371 defines an electrode to be a conductor used to establish electrical contact with a nonmetallic part of the circuit. Nishizawa et al.'s wires in Figure 1 #2 Col. 2 Lines 25-26, teaches the wires to electrically connect the luminous bodies together, where the luminous bodies are made of a nonmetallic material, (Col. 2 Lines 50-54); where a diode is made of semiconductor materials which is well known to one having skill in the art. The Appellant also argues that Nishizawa et al.'s electrodes, (wires), are not specifically taught as being pixel electrodes, but in Col. 2 Lines 50-51, it states that each luminous body, 1a, 1b, etc. forms one picture element, where in Merriam Webster's Collegiate Dictionary 10<sup>th</sup> edition on page 885, a pixel is any of small discrete elements that together constitute an image. The Appellant also argues that the semiconductor devices and the pixel electrodes of Nishizawa et al. are not in separate and distinguishable areas of the substrate. Nishizawa et al.'s Figures 1 & 3b

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does teach the pixel electrodes #2 and the semiconductor devices #1a, 2a, 3a, etc. to be in separate and easily distinguishable areas of the substrate where the area directly below the semiconductor devices #1a, 2a, 3a, etc. can be seen as first areas and the area directly below the pixel electrode #2 can be seen as second areas. The Appellant also argues Nishizawa et al. does not teach the second areas of the substrate to be weaker than the first areas, which would allow flexing of the substrate. Nishizawa et al.'s Figure 3b does teach the second areas of the substrate to be weaker than the first areas, which would allow flexing of the substrate and it is very evident by the substrate having a thickness thinner directly below the pixel electrode, (wires), than the thickness directly below the semiconductor devices, (luminous bodies).

*With regard to the second argument* the Appellant on page 4 lines 15-23 of the Appeal Brief argues the dependent claims 4 and 5 are patentable. This argument does not include any additional arguments towards patentability of claim 1. Appellant has stated on page 2 lines 23-24 of the Appeal Brief that claims 1-15 stand or fall together. Appellant's argument that claims 4 and 5 are patentable is thus moot.

*With regard to the third argument* the Appellant on page 4 lines 25-31 and page 5 lines 1-9 of the Appeal Brief argues the dependent claims 4 and 5 are patentable. This argument does not include any additional arguments towards patentability of claim 1. Appellant has stated on page 2 lines 23-24 of the Appeal Brief that claims 1-15 stand or fall together. Appellant's argument that claims 4 and 5 are patentable is thus moot.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

VAMJ  
January 9, 2004

Conferees    
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